112. *Two New Species of Reef-building Corals from Yoron-zima and Amami-Ô-sima.*

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(Comm. by H. YABE, M.I.A., Dec. 13, 1937.)

Through the courtesy of Dr. H. Hattori of the Biological Laboratory, Imperial Palace, Tokyo, we lately studied a large number of specimens of corals in the collection of the laboratory. The majority of the specimens are from the Ô-sima subgroup of the Ryûkyû Islands, while the minority are from Kii Peninsula, Hatizyô-zima, Ogasawara-zima, Kyûsyû, Taiwan and the South Sea Islands under the Japanese Mandate. In addition there are several fine specimens from Siam.

The specific determination of the corals was mostly undertaken on excellent photographs sent to us for examination,* and inspection of actual specimens were found necessary for only a few forms of the genera *Seriatopora, Favia, Favites, Tridacophyllia* and *Psammocora.* Excluding those belonging to the families Acroporidae and Poritidae, which are left for future study on particular difficulty of specific identifaction, the material at hand comprises 76 species in 36 genera, of which 2 species are new and 1 species, although at present indetermined, is also probably new.

The determined corals are as follows:

Pocillopora acuta Lamarck*
P. damicornis (Linné)
P. damicornis bulbosa (Ehrenberg)*
P. damicornis cespitosa (Dana)*
P. meandrina nobilis (Dana)
P. modumanensis Vaughan
P. setchelli Hoffmeister
P. verrucosa (Ellis & Solander)
Seriatopora caliendrum Ehrenberg
S. hystrix Dana
Hydnophora exesa (Pallas)
H. microconos (Lamarck)
H. rigida (Dana)*
Platygyra gracilis (Dana)
P. ryûkyûensis Yabe & Sugiyama
Merulina ampliata (Ellis & Solander)
Tridacophyllia lactuca (Pallas)*
T. laciniata M. Edwards & Haime
Lobophyllia costata (Dana)
L. corymbosa (Forskål)
S. sp. nov.?
Stylophora pistillata (Esper)
Euphyllia fimbriata (Spengler)
Stylocoeniella hanzawai (Yabe & Sugiyama)
Physogyra lichtensteini (M. Edwards & Haime)*
Monastraea curta (Dana)
Leptastrea purpurea (Dana)
Galaxea fascicularis (Linné)*
G. musicales (Linné)*
Echinopora lamellosa (Esper)
Cyphastrea chalcidicum (Forskål)*
C. serailia (Forskål)
Trachyphyllia amaranthum (Dana)*
Favia speciosa (Dana)
F. stelligera (Dana)
Phymastrea valenciennesii (M. Edwards & Haime)
Favites favosa (Ellis & Solander)
F. pentagona (Esper)
F. virens (Dana)
F. sp. nov.
Goniastrea aspera Verrill*

* Our thanks are due to Dr. H. Hattori for his courtesy in permitting us to study the present material of this article. Acknowledgement are also due to Mr. M. Eguchi, former member of our Institute for his preliminary study of the specimens mentioned in this article.

G. planulata (M. Edwards & Haime)
G. pectinata (Ehrenberg)
G. retiformis (Lamarck)
Coeloria astreiformis (M. Edwards & Haime)
C. lamellina (Ehrenberg)
C. rustica (Dana)
Symphyllia recta (Dana)
Echinophyllia aspera (Ellis & Solander)
Oulastrea crispata (Lamarck)
Psammocora exesa (Dana)
**P.* sp. nov.
Pachyseris rugosa (Lamarck)
Coeloseris mayeri (Vaughan)
Podobacia crustacea (Pallas)
P. elegans (M. Edwards & Haime)
P. elegans lobata (Van der Horst)
Pavona maldivensis (Gardiner)
P. decussata (Lamarck)
P. frondifera (Lamarck)
P. lilacea (Klunzinger)
Fungia echinata (Pallas)
F. plana Studer
F. scutaria Lamarck
Polyphyllia talpina (Lamarck)*
Culcicia truncata Dana ?
Dendrophyllia micranthus (Ehrenberg)
D. manni Verrill
D. aurea Quoy & Gaimard
Heliopora coerulea (Pallas)
Millepora confertissima Quelch*
M. cf. *platyphylla* (Ehrenberg)
M. truncata Dana
M. tortuosa Dana
M. sp.

The corals from Siam belong to 13 species in 11 genera marked with an asterisk in the above list; all these species also occur in the present material from the other localities. Only 3 of them, *Pocillipora acuta, P. damicornis bulbosa* and *Hydnophora rigida*, are not yet known from the coast of Taiwan or farther north.

The new species (figured) belong to the genera *Favites* and *Psammocora;* 1 form is identified questionably with *Culcicia truncata* H. Edwards & Haime,[1] originally from the China Sea. This is the second record of *Culcicia* in Japanese waters, the first being that reported by H. Yabe and M. Eguchi,[2] under the name *C. japonica*, from off Ôwasi, Mie Prefecture. The two are similar in the size of corallites and number of septa; but, our *C. truncata ?* has simple corallites with septa strongly lobed along the margin.

Interesting in respect of geographical distribution is, *Tridacophyllia laciniata* which has not been hitherto found in Japanese seas, but is now found from Amami-Ô-sima, and *Psammocora exesa* which was previously known from Daitô-zima, its only locality in Japanese waters, is now discovered also in the Ryûkyû Islands.

The present coral collection is valuable as its oceanographical data are noted of most of the collection grounds. The greatest depth of the present coral collection is 28 m, and the water temperature of various localities ranges from 23.7 to 29.6° C at the surface and from 22.3 to 29.3° C at the bottom.

Favites stylifera sp. nov.

Fig. 1.

Corallum massive, with broad base of attachment, surface mammillated, mammillae variable in size, attaining over 5 mm in diameter.

1) M. Edwards and Haime: Hist. nat. coral., Vol. 11, p. 606, 1857.
2) H. Yabe and M. Eguchi: Deep-water Corals from off Ôwasi, Mie Prefecture. Proc. **12** (1936), 167.

Calices small, tetragonal to hexagonal in outline, 3–6 mm broad, elongated up to 10 mm before fission. Septa few, not always uniform in length, slightly thickened in approaching walls, with irregularly toothed edges; those of adjacent corallites continuous across walls; in 3 cycles. Septa of first cycle thick, prominent, exsert, elevated about 1 mm above bottom, margin facing columella in gentle or steep slope, or sometimes even almost vertical. Some prolonged vertically where they traverse walls as high as 2 mm (in the manner usually found in *Stylocoenia*). Septa of second cycle thinner, less prominent; rarely some of them exsert as those of first; inner margin almost always in gentle slope. Septa of last cycle very thin, short, often incompletely developed. Lateral faces of all septa minutely granulated, granules disposed irregularly. Walls 0.5–1 mm broad, sharply crested. Paliform structure more or less distinct, 6–10 in number. Columella slightly developed, composed of filiform prolongation of septal margin; often lacking. Fission unequal. Dimensions of corallum: $20 \times 17 \times 18$ cm.

Remarks: Of various species of *Favites*, *F. meliceram* (Ehrenberg) described by T. W. Vaughan from the Cocos-Keeling Islands is most closely related to the present form; but the latter is easily distinguished from the former by smaller calices with less numerous septa and by the possession of columnar prolongation. According to Vaughan, his species is quite identical with *Goniastrea pentagona* (Esper) described by G. Matthai[2] from the islands of Minikoi and Seychelles.

Locality: Yoron-zima, Ôsima-gun, Kagosima-ken. (Yoronzima No. 5).

Psammocora decussata sp. nov.

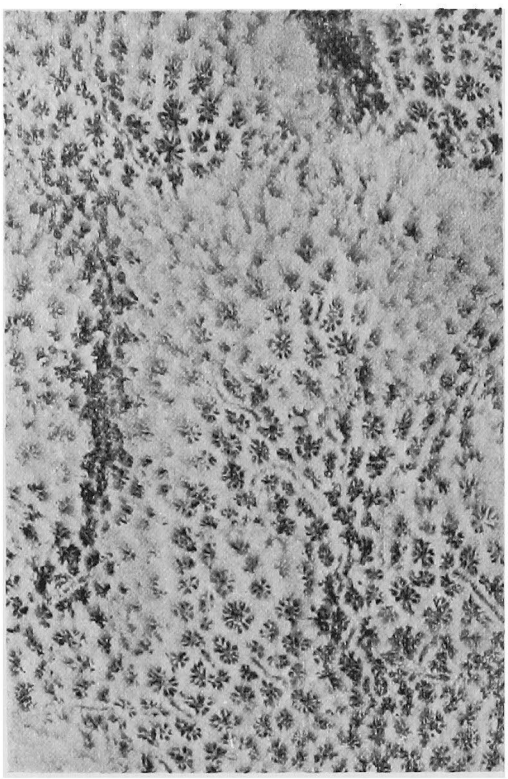
Figs. 2–4.

Corallum large, over 15 cm in longer diameter; consists of numerous erect, laterally flattened branches in cluster. Branches up to 30 mm broad in flattened surface, over 50 mm long, and usually 5 mm or less thick, marginally divided into many lobes, lobes especially marked along upper border; some of lateral lobes elongated horizontally and crosswise to branchlets, thus giving rise to a more or less reticulated aspect of the colony in upper view.

Calices superficial, rather uniformly distributed all over the surface of branches, at times showing tendency to be arranged in linear rows, rather close, small, usually less than 2 mm in diameter, not distinctly circumscribed. Septa in two sets, numbering 12 or less at periphery and 6 at center; one set of 3–4 septa petal-like in aspect; other set of septa in alternation with the former insensibly passing into intercalicinal coenenchym at periphery of calices. Synapticular rings at center often

1) T. W. Vaughan: Some Shoal-water Corals from Murray Islands (Australia), Cocos-Keeling Islands, and Faning Islands. Carnegie Inst. Wash., Vol. 9, p. 112, pl. 41, figs. 6, 6a, 1918.

2) G. Matthai: A Revision of the Recent Colonial Corals, Astreidae possessing Distinct Corallites. Trans. Linnean Soc. London, Ser. 2, Vol. 17, Pt. 1, p. 96, pl. 10, fig. 5; pl. 24, figs. 2-4; pl. 36, fig. 4, 1914.



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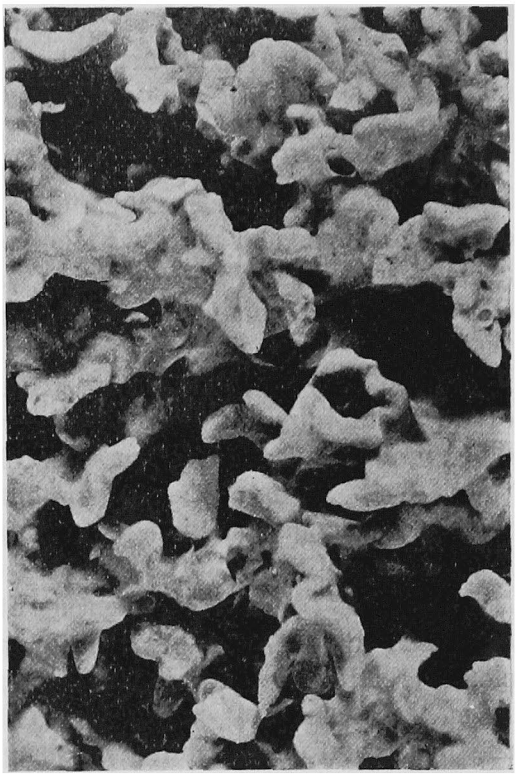

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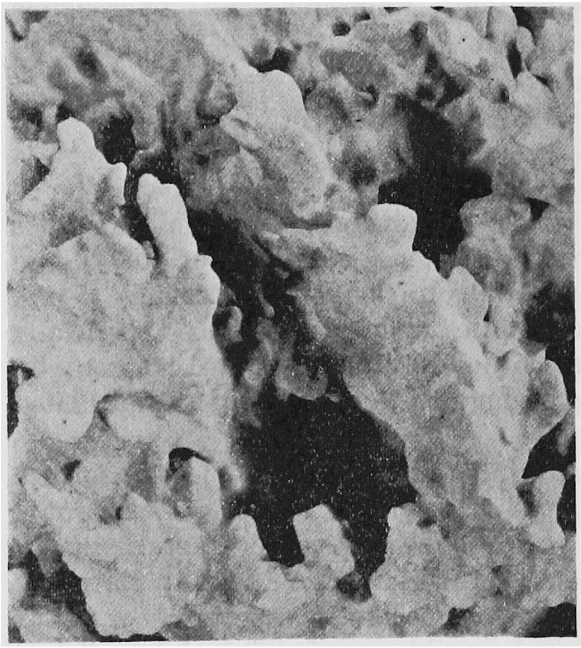
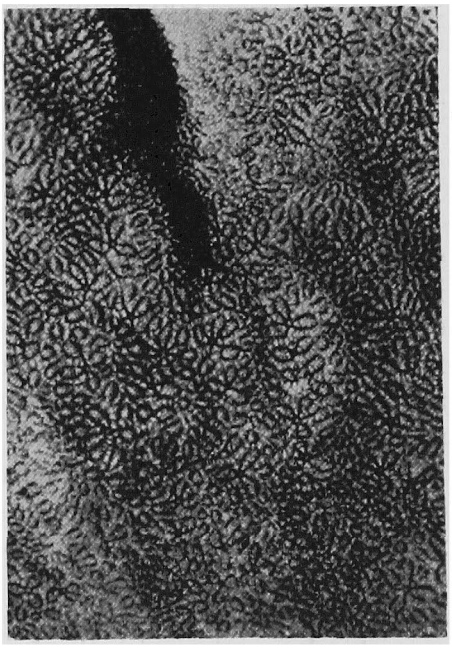


3 ×1



4 ×5

1. *Favites stylifera* sp. nov.
2-4. *Psammocora decussata* sp. nov.

distinct, composed of minute nodules in 2 rows; those of outer ring weaker than those of inner ring and sometimes almost disappear. Columella distinct, being a single round rod-like process pointed at top.

Remarks: This new form closely resembles *Psammocora exesa* Dana[1] than any other species of the genus, but is distinguished from it by the corallum which is composed of numerous subparallel flattened branches in arborescent growth, bearing smaller calices with less numerous septa and shallow axial fossa.

Locality: Amami-Ô-sima, Ôsima-gun, Kagosima-ken. (Ô-sima-hontô No. 6).

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1) J. S. Gardiner: The Fauna and Geography of the Maldive and Laccadive Archipelagoes, Vol. 2, 1906, p. 952, pl. 92, fig. 22. H. Yabe, T. Sugiyama and M. Eguchi: Recent Reef-building Corals from Japan and the South Sea Islands under the Japanese Mandate, 1. Sci. Rep. Tôhoku Imp. Univ., Ser. 2, Special Vol. No. 1, 1936, p. 59, pl. 44, figs. 3, 4.